

CLAIM AMENDMENTS

1. – 7. (Canceled)

8. (New) A method for fabricating an apodized optical fiber grating comprising the steps of:

providing an optical fiber, a light source having beams, and, between the source and the fiber, a plurality of lenses and an amplitude mask with a slit pattern having slits with a predetermined width and with periodic spacing between the slits;

positioning the source, fiber, mask and plural lenses in alignment along an optical axis, with the mask being perpendicular to the optical axis, so that light from the light source traveling through the plural lenses and then through the slit pattern to reach the fiber would produce desired spacings and widths of a grating pattern on the fiber;

updating said positioning so as to rectify said beams into parallelism with said optical axis to conform said spacings and widths of the grating pattern to the spacings and widths of the slit pattern; and

producing said light in a path from said light source to the plural lenses, to the amplitude mask, and to said optical fiber to fabricate said apodized optical fiber grating.

9. (New) The method of claim 8, wherein the updating step comprises the step of moving one of the plural lenses with respect to another of the plural lenses.

10. (New) The method of claim 9, wherein the plural lenses comprise at least one cylindrical convex lens and at least one concave lens.

11. (New) The method of claim 8, wherein the plural lenses comprise at least one cylindrical convex lens and at least one concave lens.

12. (New) The method of claim 8, wherein the light source comprises a source of ultraviolet light.

13. (New) The method of claim 12, wherein the ultraviolet light source comprises an excimer laser.

14. (New) The method of claim 8, wherein said slits have respective inner walls, the updating step further rectifying said beams into parallelism with said inner walls.

15. (New) The method of claim 8, wherein a width of each of said slits is substantially greater than any wavelength of said light.

16. (New) A method for fabricating an apodized optical fiber grating comprising the steps of:

providing a light source, an optical fiber, and, between the source and the fiber, a plurality of lenses and an amplitude mask with a slit pattern having slits with respective widths and with periodic spacing between the slits, the mask having a width;

positioning the source, fiber, mask and plural lenses in alignment along an optical axis, with the mask being perpendicular to the optical axis, so that light from the light source traveling through the plural lenses and then through the slit pattern to reach the fiber would produce desired spacings and widths of a grating pattern on the fiber;

adjusting the mask width to reduce differences as to spacing, and as to width, among said spacings and widths of a grating pattern; and

producing said light in a path from said light source to the plural lenses, to the amplitude mask, and to said optical fiber to fabricate said apodized optical fiber grating.

17. (New) The method of claim 16, wherein the light source comprises a source of ultraviolet light.

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18. (New) The method of claim 17, wherein the ultraviolet light source comprises an excimer laser.

19. (New) The method of claim 16, wherein a width of each of said slits is substantially greater than any wavelength of said light.